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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/688,148

10/17/2003

Daniel G. Gelb

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

KIM, ANDREW

ART UNIT

PAPER NUMBER

3712

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/688,148	Applicant(s) GELB ET AL.	
	Examiner Andrew Kim	Art Unit 3712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/17/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-42 of U.S. Patent No. 6,853,398.

An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-36 falls within the scope of the method and system for real-time video

communication within a virtual environment recited in claims 1-42 of U.S. Patent No. 6,853,398. That is, claims 1-32 is obvious over claims 1-42 of U.S. Patent No. 6,853,398. Specifically, since a gaming environment are a species of the generic category defined by "virtual environment," the system and method of claims 1-36 reciting a "gaming environment" is obvious over claims 1-42 of U.S. Patent No. 6,853,398 reciting a "virtual environment."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-19 and 21-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Malzbender et al. (US 6,853,398 B2), "Malzbender".

The applied reference has common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claims 1, 21: Malzbender discloses

- capturing a plurality of real-time video streams of a local participant from a plurality of camera viewpoints (Malzbender, Abstract);
- generating real-time renderings of said local participant based on said plurality of real-time video streams by applying a new view synthesis technique, said real-time renderings taken from a perspective of a remote participant located remotely in said gaming environment (Malzbender, Abstract); and
- sending said real-time renderings to said remote participant for viewing within said gaming environment (Malzbender, Abstract).

Claim 2: Malzbender discloses incorporating said real-time renderings comprising real-time photo-realistic features of said local participant into a graphically generated avatar (col. 4, lines 35-46), said graphically generated avatar representing said local participant in said gaming environment; and sending said graphically generated avatar incorporating said real-time renderings to said local participant for viewing within said gaming environment (col. 4, lines 35-46).

Claim 3: Malzbender discloses generating real-time renderings of said local participant further comprises: generating image based renderings of said local participant as said real-time renderings, wherein said new-view synthesis technique comprises an image-based visual hull technique. The image-based visual hull technique, as disclosed by the Applicant, "back projects the contour silhouettes into a three-dimensional space and computes the intersection of the resulting frusta. The intersection, the visual hull, approximates the geometry of the user. Rendering this

geometry with view-dependent texture mapping creates convincing new views” (Applicant, paragraph 50). Malzbender equally discloses, “multiple images are collected without a foreground participant present to build a background model for each pixel in each camera. This data may be stored in module 130 for purposes of contour extraction. The model is a statistical characterization that specifies what the mean and standard deviations for each color channel are at each sensor element when viewing the background. This allows for the segmentation of the user from the background in each of the camera views. Other background models can easily be implemented, such as, multimodal representations of color statistics, and mixtures of Gaussian distribution functions” (col. 6, lines 30-41).

Claim 4: Malzbender discloses generating real-time renderings of said local participant further comprises: generating a three-dimensional geometric model of said local participant from said plurality of real-time video streams as said real-time renderings (col. 7, lines 8-15).

Claim 5: Malzbender discloses generating real-time renderings of said local participant further comprises: rendering said real-time renderings from a second location of said remote participant with respect to a first location of said local participant within a coordinate space of said gaming environment (col. 5, lines 45-63).

Claim 6: Malzbender discloses enabling a change in at least one of said first and second locations by allowing said local participant and said remote participant to navigate through said coordinate space; and modifying said real-time renderings to

reflect said change in at least one of said first and second locations (col. 5, line 45 – col. 6, line 2).

Claims 7, 22: Malzbender discloses blending said real-time renderings within a synthetic rendering of said gaming environment; and displaying said real-time renderings that is blended within said gaming environment at a display viewable by said second participant to enable real-time video communication for interactive gaming between said local participant and said remote participant within said gaming environment (col. 5, line 45 – col. 6, line 2).

Claim 8: Malzbender discloses gaming environment comprises a three dimensional gaming environment (col. 7, lines 8-15).

Claim 9: Malzbender discloses personifying said graphically generated avatar to said local participant by illustrating real-time emotion of said local participant through said video image stream comprising representative said real-time photo-realistic features of said local participant (col. 10, lines 47-58).

Claim 10: Malzbender discloses generating another real-time renderings of said local participant based on said plurality of real-time video streams by applying said new view synthesis technique, said another real-time renderings taken from a perspective of another participant located remotely in said gaming environment; and sending said another real-time renderings to said another participant for viewing within said gaming environment (col. 9, lines 7-27).

Claim 11: Malzbender discloses

- capturing a plurality of real-time video streams of a local participant from a plurality of camera viewpoints (Malzbender, Abstract);
- generating real-time renderings of said local participant based on said plurality of real-time video streams by applying a new view synthesis technique, said real-time renderings taken from a perspective of a remote participant located remotely in said gaming environment (Malzbender, Abstract); and
- incorporating said video image stream comprising real-time photo-realistic features of said local participant into a graphically generated avatar (col. 4, lines 35-46), said graphically generated avatar representing said local participant in said gaming environment (col. 4, lines 35-46).

Claim 12: Malzbender discloses generating said video image stream further comprises: rendering said video image stream from a second location of said remote participant with respect to a first location of said local participant within a coordinate space of said gaming environment (col. 5, lines 45-63 and col. 9, lines 7-27).

Claim 13: Malzbender discloses enabling a change in at least one of said first and second locations by allowing said local participant and said remote participant to navigate through said coordinate space; and modifying said video image stream to reflect said change in at least one of said first and second locations (col. 5, line 45 – col. 6, line 2).

Claim 14: Malzbender discloses blending said graphically generated avatar incorporating said video image stream within a synthetic rendering of said gaming

environment; and displaying said graphically generated avatar incorporating said video image stream within said gaming environment at a display viewable by said remote participant to enable real-time video communication for interactive gaming between said local participant and said remote participant within said gaming environment (col. 5, line 45 – col. 6, line 2).

Claim 15: Malzbender discloses personifying said graphically generated avatar to said local participant by illustrating real-time emotion of said local participant through said video image stream comprising representative said real-time photo-realistic features of said local participant (col. 10, lines 47-58).

Claim 16: Malzbender discloses new-view synthesis technique comprises an image-based visual hull technique. The image-based visual hull technique, as disclosed by the Applicant, “back projects the contour silhouettes into a three-dimensional space and computes the intersection of the resulting frusta. The intersection, the visual hull, approximates the geometry of the user. Rendering this geometry with view-dependent texture mapping creates convincing new views” (Applicant, paragraph 50). Malzbender equally discloses, “multiple images are collected without a foreground participant present to build a background model for each pixel in each camera. This data may be stored in module 130 for purposes of contour extraction. The model is a statistical characterization that specifies what the mean and standard deviations for each color channel are at each sensor element when viewing the background. This allows for the segmentation of the user from the background in each of the camera views. Other

background models can easily be implemented, such as, multimodal representations of color statistics, and mixtures of Gaussian distribution functions" (col. 6, lines 30-41).

Claim 17: Malzbender discloses generating said video image stream further comprises: generating a three dimensional geometric model of said local participant based on said plurality of real time video streams by applying said new view synthesis technique; and generating said video image stream of said local participant from said three dimensional geometric model (col. 7, lines 8-15).

Claim 18: Malzbender discloses generating a real-time audio output from audio of said local participant to enable real-time audio communication in said gaming environment between said local participant and said remote participant (col. 8, lines 4-23).

Claim 19: Malzbender discloses varying a total of said plurality of camera viewpoints when capturing said plurality of real-time video streams of said local participant to vary image quality in said plurality of video image streams (col. 5, lines 1-13).

Claim 23: Malzbender discloses receiving a plurality of input audio streams in real-time associated with said plurality of observing participants for mixing into a single audio stream that is broadcast through a local speaker (Malzbender, claim 25).

Claim 24: Malzbender discloses a display for viewing said plurality of graphically generated avatars representing said plurality of observing participants to enable real-time view communication between said local participant and said plurality of observing

participants within said three dimensional gaming environment (col. 6, line 58 – col. 7, line 7).

Claim 25: Malzbender discloses a contour extraction module for extracting said local participant from a physical background (col. 5, lines 45-63).

Claim 26: Malzbender discloses a means for capturing an audio stream in real-time of said local participant (col. 7, lines 39-45).

Claim 27: Malzbender discloses a processor; and a computer readable memory coupled to said processor and containing program instructions that, when executed, implement a method of real-time rendering in a gaming environment to create an interactive experience, comprising: capturing a plurality of real-time video streams of a local participant from a plurality of camera viewpoints; generating real-time renderings of said local participant based on said plurality of real-time video streams by applying a new view synthesis technique, said real-time renderings taken from a perspective of a remote participant located remotely in said gaming environment; and sending said real-time renderings to said remote participant for viewing within said gaming environment (Malzbender, claim 33).

Claim 28: Malzbender discloses incorporating said real-time renderings comprising real-time photo-realistic features of said local participant into a graphically generated avatar, said graphically generated avatar representing said local participant in said gaming environment; and sending said graphically generated avatar

incorporating said real-time renderings to said local participant for viewing within said gaming environment (col. 4, lines 35-46).

Claim 29: Malzbender discloses generating real-time renderings of said local participant in said method further comprises: generating image based renderings of said local participant as said real-time renderings, wherein said new-view synthesis technique comprises an image-based visual hull technique. The image-based visual hull technique, as disclosed by the Applicant, "back projects the contour silhouettes into a three-dimensional space and computes the intersection of the resulting frusta. The intersection, the visual hull, approximates the geometry of the user. Rendering this geometry with view-dependent texture mapping creates convincing new views" (Applicant, paragraph 50). Malzbender equally discloses, "multiple images are collected without a foreground participant present to build a background model for each pixel in each camera. This data may be stored in module 130 for purposes of contour extraction. The model is a statistical characterization that specifies what the mean and standard deviations for each color channel are at each sensor element when viewing the background. This allows for the segmentation of the user from the background in each of the camera views. Other background models can easily be implemented, such as, multimodal representations of color statistics, and mixtures of Gaussian distribution functions" (col. 6, lines 30-41).

Claim 30: Malzbender discloses generating real-time renderings of said local participant in said method further comprises: generating a three-dimensional geometric

model of said local participant from said plurality of real-time video streams as said real-time renderings (col. 7, lines 8-15).

Claim 31: Malzbender discloses generating real-time renderings of said local participant in said method further comprises: rendering said real-time renderings from a second location of said remote participant with respect to a first location of said local participant within a coordinate space of said gaming environment (col. 5, lines 45-63).

Claim 32: Malzbender discloses enabling a change in at least one of said first and second locations by allowing said local participant and said remote participant to navigate through said coordinate space; and modifying said real-time renderings to reflect said change in at least one of said first and second locations (col. 5, line 45 – col. 6, line 2).

Claim 33: Malzbender discloses blending said real-time renderings within a synthetic rendering of said gaming environment; and displaying said real-time renderings that is blended within said gaming environment at a display viewable by said second participant to enable real-time video communication for interactive gaming between said local participant and said remote participant within said gaming environment (col. 5, line 45 – col. 6, line 2).

Claim 34: Malzbender discloses wherein said gaming environment comprises a three dimensional gaming environment (col. 7, lines 8-15).

Claim 35: Malzbender discloses personifying said graphically generated avatar to said local participant by illustrating real-time emotion of said local participant through

said video image stream comprising representative said real-time photo-realistic features of said local participant (col. 10, lines 47-58).

Claim 36: Malzbender discloses generating another real-time renderings of said local participant based on said plurality of real-time video streams by applying said new view synthesis technique, said another real-time renderings taken from a perspective of another participant located remotely in said gaming environment; and sending said another real-time renderings to said another participant for viewing within said gaming environment (col. 9, lines 7-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 20 rejected under 35 U.S.C. 103(a) as being obvious over Malzbender et al. (US 6,853,398 B2), "Malzbender".

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Claim 20: Malzbender does not disclose performing non-photorealistic processing of said plurality of video image streams resulting in a non-photorealistic cartoon rendering of said plurality of video image streams. Instead, Malzbender discloses performing photorealistic processing to render an avatar (col. 4, lines 35-46). However, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a cartoon rendering feature when Malzbender's invention is

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applied to a gaming environment. It is old and well known in the art that gaming avatars notoriously non-photorealistic and often a depiction of something fantastical and/or inhuman (e.g. wizards, trolls, worms) to offer players with a non-real world experience.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to incorporate non-photorealistic processing to Malzbender's invention to provide players with a non-real world experience which attracts more players to play the game which increases game profits.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Kim whose telephone number is 571-272-1691. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hotaling can be reached on 571-272-4437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AK 6/26/2006


SCOTT JONES
PRIMARY EXAMINER